

Strategic Asset Allocation Long-Term Care Fund (LTC)

Geraldine Jimenez & Raymond Venner

May 16, 2011

Agenda

- Plan Characteristics and Effect on Asset Allocation
- LTC Objectives and Program Characteristics
- Asset Allocation Considerations for LTC
- LTC Alternative Policy Portfolios
- Summary: Merits of Recommended Portfolios
- Next Steps
- Capital Market Assumptions (Appendix)

Plan Characteristics and Effect on Asset Allocation

Plan Characteristic	Implication for Portfolio	Notes
Funded Status (High)	Decrease Risk	If better-funded, more able to pay liabilities while incurring less risk
Funded Status (Low)	Increase Risk	To the extent to which downside risk remains acceptable for lower funded plans
Cash Outflows (Large)	Decrease Risk	Large benefit payments reduce the ability to recover from an investment loss
Cash Inflows (Large)	Increase Risk	Large contributions increase the ability to absorb an investment loss
Duration of Outflows (Long)	Increase Risk	A plan can better absorb an investment loss if benefit payments are later
Diversity of Contributions (Greater)	Increase Risk	A plan can bear more risk if multiple and diverse funding sources
Smoothing of Contributions (Greater)	Increase Risk	Greater ability to absorb an investment loss if contributions are raised gradually

* The table is intended to be merely a tool in selecting the target risk of a plan

- not a complete list of characteristics
- not definitive relations between characteristics and the willingness or ability to bear investment risk

LTC Objectives and Program Characteristics

The CalPERS Long-Term Care Program (the Program) has provided nursing home and in-home care benefits to qualified California public employees since 1995

Health Benefits Committee sets premium rates and approves program design

CalPERS Investment Committee sets asset allocation and manages the assets

Program has been closed to new members since July 2008

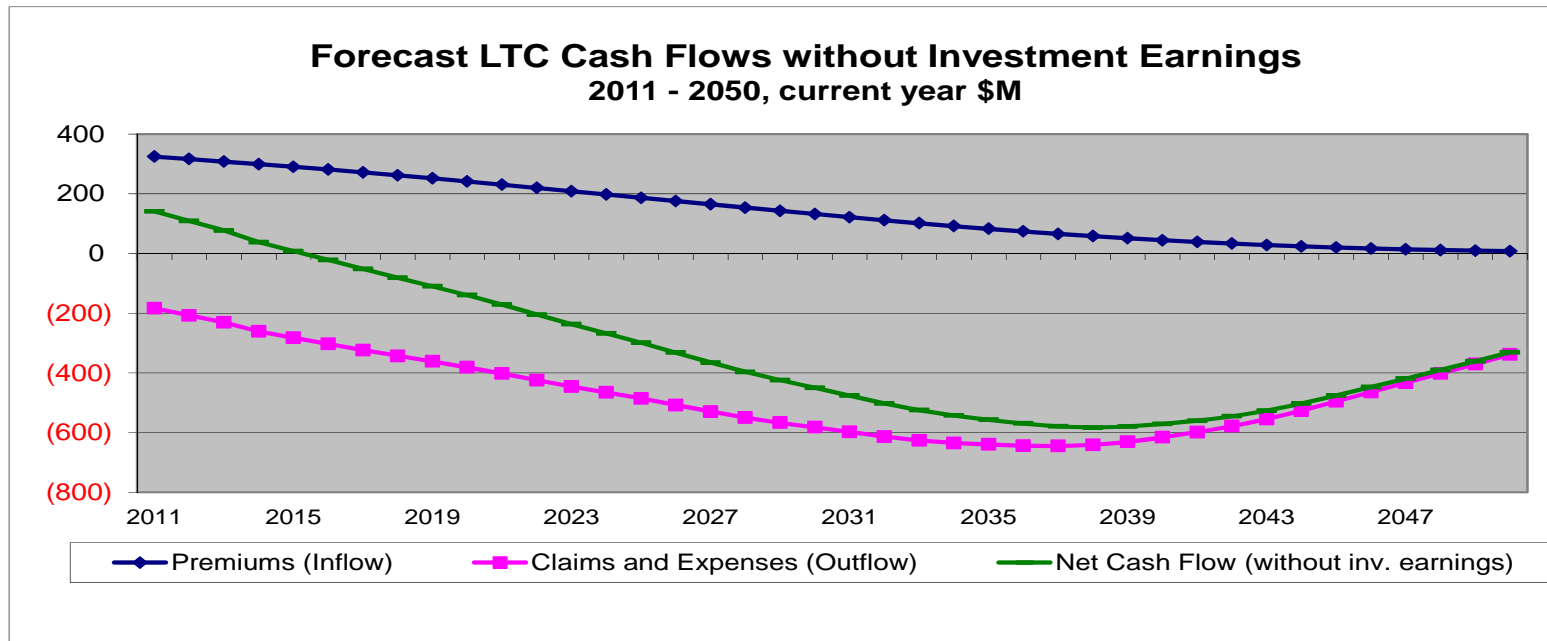
Asset Allocation Considerations for LTC

The LTC Program differs from the PERF on several salient characteristics:

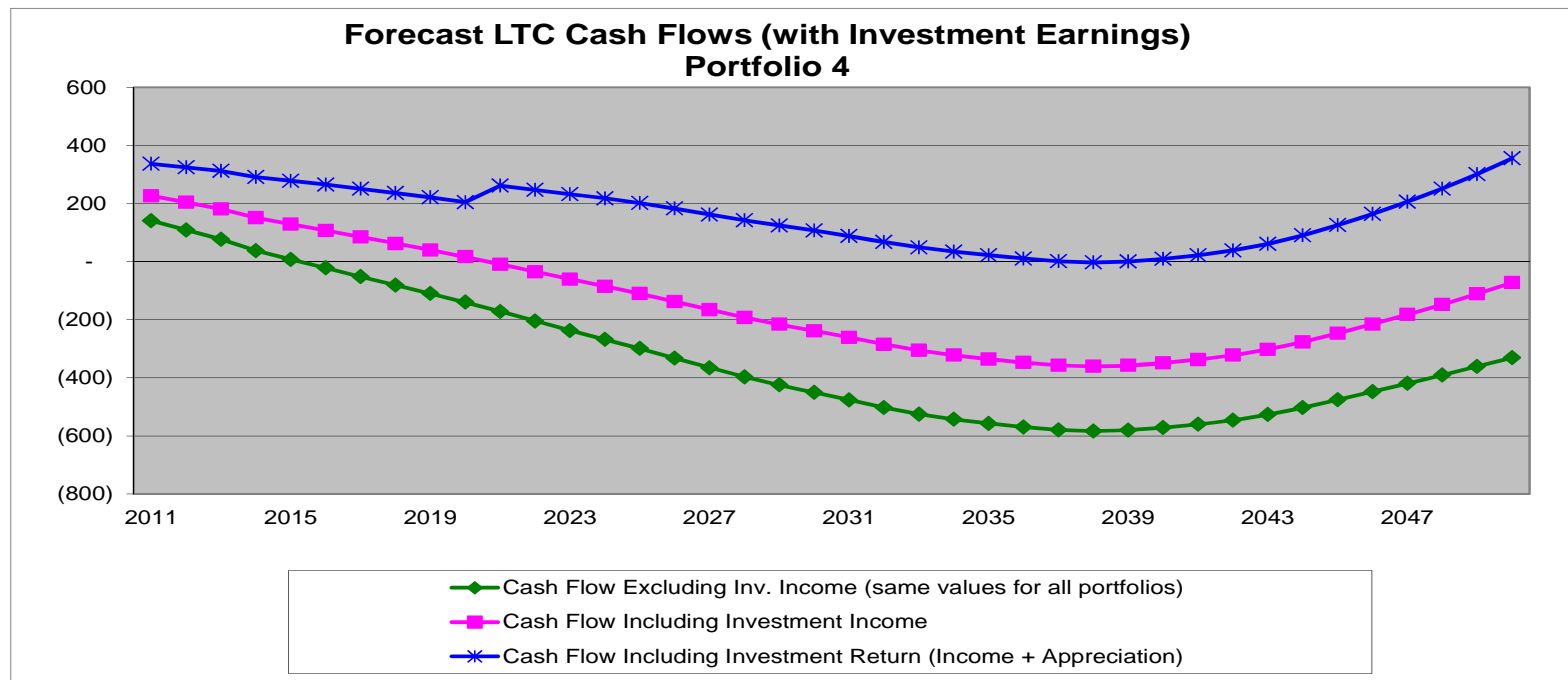
- LTC contributions consist entirely of member premiums (no employer contributions)
 - Member premiums and investment earnings are the only sources of funds to pay benefits
- The LTC Program is approximately fully funded (12-31-2010 LTC Valuation)
 - Assumes continuation of premium increases for some members
- Less smoothing of member premium (contribution) rates

LTC Program characteristics suggest a conservative to moderate asset allocation

- All contributions are from members only \Rightarrow conservative
- Cash flow currently positive; expected to turn negative after 2015 \Rightarrow conservative to moderate
- Program approximately fully funded \Rightarrow moderate
- Limited smoothing of contributions \Rightarrow conservative



- Premiums paid by members, currently \$325 million per year, are forecast to decline to nearly zero over three decades
 - includes previously approved premium rates and annual rate increases
- Claims will substantially increase over this period
- Thus net cash flow is projected to turn negative by 2016
 - this shortfall can be met from LTC Fund asset sales and, if needed, increased premiums



- Forecast LTC non-investment cash flow (green line)
 - equals member premiums minus (claims and expenses)
 - is the same for all portfolios
- Forecast cash flow with investment income (pink line) is obtained by adding non-investment cash flow (green line) to forecast investment income (equity dividends plus bond coupons)
 - forecast cash flows with investment income are very similar for portfolios 2, 3 and 4
 - forecast smaller market values of portfolio 2 nearly offset its higher income yield vs. portfolio 4
- Cash flow including investment return includes portfolio capital appreciation (blue line)

LTC Asset Classes

LTC Current	LTC Proposed
TIPS	TIPS
U.S. Fixed Income	U.S. Fixed Income
U.S. High Yield	--
U.S. Equity	Global Equity
Int'l Equity	
Global REITs	Global REITs
--	Commodities

2011 Enhancements

- Consolidate U.S. and int'l equity into "Global Equity" with emerging markets and small- to mid-cap stocks
- Remove separate target allocation to high yield – included in U.S. Fixed Income
- Add Commodities to enhance diversification and hedge against rising inflation
- Offer five broad asset classes for diversification

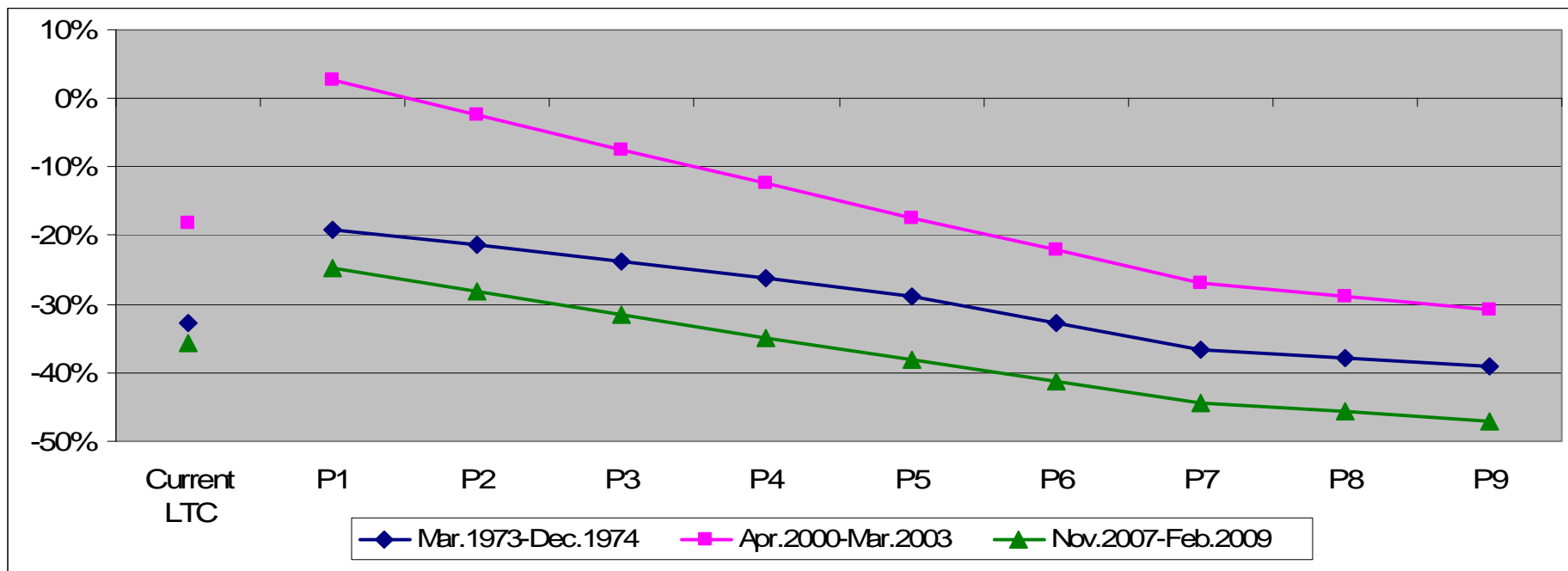
LTC Alternative Policy Portfolios

Nine alternative policy portfolios were selected from conservative (P1) to aggressive (P9)

	Current									
	LTC	P1	P2	P3	P4	P5	P6	P7	P8	P9
Forecast Annual Nominal Return (through fiscal year 2020)										
Compound	6.38%	5.50%	5.75%	6.00%	6.25%	6.50%	6.75%	7.00%	7.10%	7.20%
Volatility	9.32%	6.74%	7.27%	7.90%	8.63%	9.46%	10.35%	11.31%	11.73%	12.18%
Average	6.79%	5.71%	6.00%	6.29%	6.60%	6.92%	7.25%	7.59%	7.74%	7.89%
Sharpe Ratio	0.685	0.816	0.791	0.759	0.724	0.687	0.652	0.619	0.605	0.591
Prob. of annual loss	23.3%	19.8%	20.5%	21.3%	22.2%	23.2%	24.2%	25.1%	25.5%	25.8%
Prob. of annual loss > 10%	3.6%	1.0%	1.4%	2.0%	2.7%	3.7%	4.8%	6.0%	6.5%	7.1%
Allocation										
US I.L. Bonds (TIPS)	7%	15%	15%	15%	15%	15%	11%	6%	5%	5%
U.S. Nominal Bonds	30%	48%	42%	36%	30%	24%	22%	20%	18%	15%
U.S. High Yield Bonds	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Global Equity	48%	26%	32%	38%	44%	50%	56%	63%	66%	69%
Global Public Real Estate	5%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Commodities	0%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Global Equity + REITs										
Capital Allocation	53%	34%	40%	46%	52%	58%	64%	71%	74%	77%
Risk Allocation	85%	65%	75%	82%	88%	92%	94%	96%	97%	97%

- Portfolios 2, 3 & 4 all appear reasonable for the LTC Fund
- Allocations to equities including REITs are 40%, 46%, and 52% respectively
- The risk-return profile of the current LTC portfolio is between that of Portfolios 4 & 5
- Equity Allocation is the share of portfolio volatility explained by the returns of global equity & REITS

Simulated Portfolio Cumulative Real Returns During Equity Downturns



- Since 1970, cumulative equity market losses exceeded 45% during three periods.
- Simulated cumulative real (net of inflation) returns during these stress periods are shown for the current LTC policy portfolio and for portfolios 1 to 9.
- Maximum cumulative real losses:
 P2: 21 to 28% P3: 24 to 32% P4: 26 to 35% P5: 29 to 38%

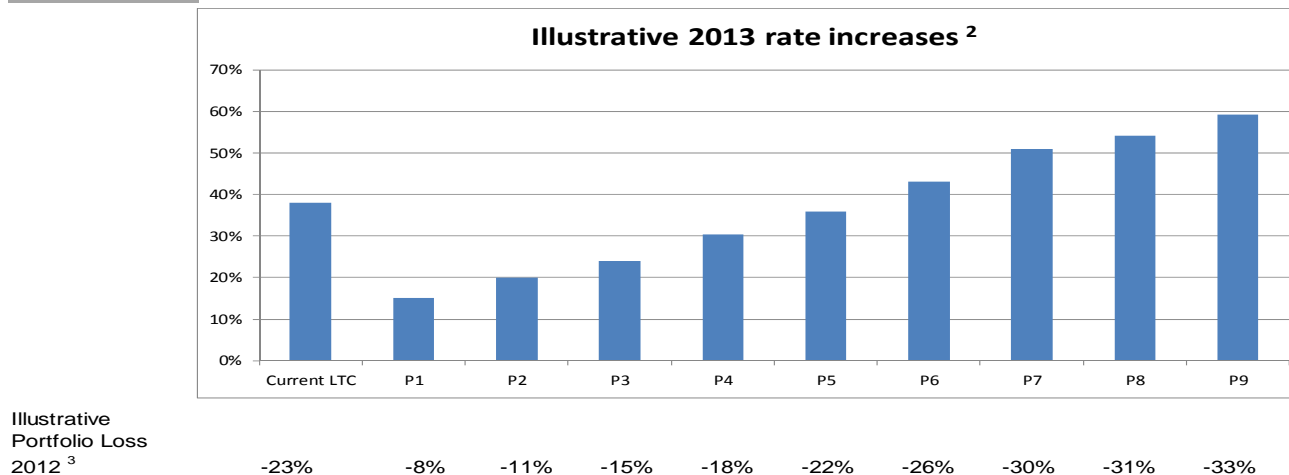
Illustrative LTC Alternative Policy Portfolios: Illustrative Reward-Risk Tradeoff

REWARD

Impact on Ongoing Rate Increases

	Current LTC	P1	P2	P3	P4	P5	P6	P7	P8	P9
Year of last premium rate increase ¹	2023	Always need on-going rate increase	Always need on-going rate increase	2038	2024	2020	2017	2015	2014	2013

RISK



Notes:

¹ Year LTC premium rate increase can stop assuming 10% margin and expected returns are realized

² One-time premium rate increase needed to return the Program to the 10% margin assuming associated portfolio loss occurs in 2012

³ Estimated average cumulative nominal (real + fixed 3% annual inflation) loss during 3 worst equity downturns since 1970 for each portfolio

Summary: Merits of Recommended Portfolios

Portfolios 2, 3 & 4 are all reasonable LTC Fund policy portfolios

- All are more conservative than the current LTC portfolio
 - consistent with LTC Program characteristics

Portfolio	Considerations
P2	<ul style="list-style-type: none"> • Greatest return stability; smallest loss in adverse markets • Highest expected Sharpe ratio (measure of risk-adjusted returns) • Most risk diversified across asset classes
P3	<ul style="list-style-type: none"> • Moderate portfolio returns • Higher Sharpe ratio than P4 and current LTC portfolio
P4	<ul style="list-style-type: none"> • Highest expected returns; minimizes expected premiums • Most similar to current LTC portfolio, minimizes transition costs • Consistent with gradual transition to more conservative portfolio

Next Steps

- Investment staff will revise the current investment policy and submit to the IC Policy Subcommittee on June 13, 2011. If approved, the item will go to the Investment Committee on August 15, 2011 for final approval.
- Investment staff will develop underlying investment fund implementation plan.
- Actuarial Office staff along with actuarial consulting staff will recommend a discount rate assumption for the recommended policy portfolio after the policy portfolio is approved.
- Health Benefit Program staff will issue third party administrator RFP, develop a restructuring plan for the Program.
- Investment staff will return to the Investment Committee in one year to reassess the appropriateness of the asset allocation strategy given the program changes, funded status, and capital market conditions.

Capital Market Assumptions

Forecast Asset Returns

	Compound Return	Volatility of Return	Arithmetic Return
U.S. Inflation Linked Bonds	3.50%	6.0%	3.67%
U.S. Nominal Bonds	3.75%	6.5%	3.95%
Global Equity	7.75%	16.0%	8.93%
Global Public Real Estate	7.75%	18.0%	9.24%
Commodities	5.00%	21.0%	7.08%

Forecast Sources

- Inflation-linked bonds (TIPS), nominal bonds, global equity, and commodities equates to Retirement Plan 2010 ALM Study, Nov. 2010
- Global REITs are assumed to have the same return as other equities but higher volatility consistent with long-term historical returns

Asset Class Caps and Floors

	Min	Max
U.S. Inflation Linked Bonds	5%	15%
U.S. Nominal Bonds	15%	100%
Global Equity	0%	80%
Global Public Real Estate	0%	8%
Commodities	0%	3%

Assumptions

- Maximum and minimum target allocations represent considerations not fully captured in the optimization
- Upper limits are set for assets that are potentially illiquid and that have a relatively small investable universe
- TIPS have a minimum because it is the asset most similar to the retirement liabilities, especially for plans with cost of living adjustments
- Minimum target weight on U.S. investment grade bonds ensures that at least 20% of every policy portfolio diversifies risks of growth assets

Forecast Correlations

	U.S. Inflation Linked Bonds	U.S. Nominal Bonds	Global Equity	Global Public Real Estate
U.S. Inflation Linked Bonds				
U.S. Nominal Bonds	0.55			
Global Equity	0.00	0.10		
Global Public Real Estate	0.17	0.14	0.55	
Commodities	0.20	0.00	0.10	0.26

Correlation measures the co-movement of asset returns. A lower correlation indicates better diversification.

Source of forecast correlations

- Inflation linked bonds, nominal bonds, global equity, and commodities = Retirement Plan 2010 Asset Liability Workshop
- Global public real estate = Wilshire Jan. 2010 for consistency with other correlations (little change between 2010 and 2011)

Correlation vs. global equity is highest for public real estate.